WE CLAIM:

1. A process for the hydrogenation of alkylaryl ketones, which process comprises contacting a feed comprising the alkylaryl ketones and from 0.5% to 30% by weight of phenolic compounds with hydrogen in the presence of a heterogeneous hydrogenation catalyst.

2. The process of claim 1, in which the hydrogenation catalyst comprises copper as metal or metal compound.

3. The process of claim 1, wherein at least part of the phenolic compounds are added to the feed comprising the alkylaryl ketones.

4. The process of claim 1, comprising the steps of:

(a) contacting a feed comprising the alkylaryl ketones and from 0.5% to 30% by weight of phenolic compounds with hydrogen in the presence of a heterogeneous hydrogenation catalyst; and,

(b) removing at least part of the alkylaryl alcohol formed in step (a) from a stream comprising the phenolic compounds.

5. The process of claim 1, in which the alkylaryl ketone is acetophenone.

6. The process of claim 1, in which the feed comprising the alkylaryl ketones is obtainable by a process comprising the steps of:

(i) contacting a feed comprising alkylaryl compounds with oxygen to obtain a feed comprising alkylaryl hydroperoxides and alkylaryl ketones;

(ii) contacting the feed obtained in step (i) with an alkene in the presence of a catalyst to obtain a reaction mixture comprising alkylene oxide, alkylaryl alcohol and alkylaryl ketones; and,

(iii) removing at least part of the alkylene oxide and alkylaryl alcohols from the reaction mixture

obtained in step (ii) to obtain the feed comprising alkylaryl ketones.

7. The process of claim 7, in which the hydrogenation catalyst comprises copper as metal or metal compound.

8. The process of claim 7, wherein at least part of the phenolic compounds are added to the feed comprising the alkylaryl ketones.

9. The process of claim 7, comprising the steps of:
(a) contacting a feed comprising the alkylaryl ketones and from 0.5% to 30% by weight of phenolic compounds with hydrogen in the presence of a heterogeneous hydrogenation catalyst; and,
(b) removing at least part of the alkylaryl alcohol formed in step (a) from a stream comprising the phenolic compounds.

10. The process of claim 7, in which the alkylaryl ketone is acetophenone.

11. A process for the preparation of a heterogeneous hydrogenation catalyst having an improved activity, which process comprises the steps of:
(a1) preparing a hydrogenation catalyst that is essentially insoluble in the reaction medium; and,
(a2) contacting the hydrogenation catalyst obtained in step (a1) with a feed comprising of from 0.5% to 100% by weight of phenolic compounds.

12. The process of claim 12, wherein the hydrogenation catalyst comprises copper as metal or metal compound.

13. A catalyst obtainable by the process comprising:
(a1) preparing a hydrogenation catalyst that is essentially insoluble in the reaction medium; and,

(a2) contacting the hydrogenation catalyst obtained in step (a1) with a feed comprising of from 0.5% to 100% by weight of phenolic compounds.